Nominals with the suffix *-ač*
in Croatian

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Abstract: The paper presents an analysis of Croatian agentive nominals with the suffix *-ač* within the Distributed Morphology approach, adopting and applying Alexiadou & Schäfer's (2010) model. The internal morphological structure of the *-ač* nouns, and their eventive properties were considered in detail. The analysis has shown that the eventive/non-eventive properties of *-ač* nouns do not depend on animacy, but rather on the episodic vs. dispositional distinction. However, instrument nominals are distinguished from animate nominals in some respects. Croatian *-ač* nouns exhibit properties that cannot be completely captured by the framework adopted.

Keywords: suffix *-ač*; Croatian; word formation; eventivity; nouns; Distributed Morphology

1. Introduction

English agentive nouns with the suffix *-er* have received considerable attention in the linguistic literature in the past thirty years (Rappaport Hovav & Levin 1992; Alexiadou 2001; Lieber 2004; Booij & Lieber 2004; Alexiadou & Schäfer 2010). Cognate nominals in other languages have also been researched (e.g., Booij 1986 for Dutch, Roy & Soare 2014 for French). Several approaches within the generative framework have assumed that productive deverbal *-er* nominals correspond to an external argument of the base verb, and that these nominals can, at least in some cases, exhibit properties of event nominals (Grimshaw 1990; Rappaport Hovav & Levin 1992; Alexiadou & Schäfer 2010; Roy & Soare 2014).

This paper presents an analysis of Croatian agentive nominals with the suffix *-ač* within the Distributed Morphology approach, adopting and applying Alexiadou & Schäfer's (2010) model developed on the basis of English *-er* nominals. Croatian deverbal *-ač* nominals correspond to English *-er* nominals, as they mostly refer to external arguments (instruments and agents) and are not regularly built on unaccusative verbs. The eventivity of *-ač* nouns is tested according to event tests proposed by Grimshaw (1990), Larson (1998), and Roy & Soare (2014). The analysis has shown

that the eventive/non-eventive properties of -*ač* nouns do not depend on animacy, but rather on the episodic vs. dispositional distinction (Alexiadou & Schäfer 2010). Croatian -*ač* nouns exhibit properties that cannot be completely captured by the adopted framework (verbal functional structure is supported by semantic tests, but not fully by morphological structure). Roy & Soare's (2014) distinction between phrases co-occurring with instrumental nouns and complements of other agentive nominals has also proved useful for Croatian.

The second section provides a brief introduction to the main theoretical framework. The third section presents a description of -*ač* nouns, their basic features, and the internal morphological structure of deverbal nominals. In the fourth section, eventivity tests are applied to Croatian -*ač* nouns and the complement structure of -*ač* nominals is presented. The fifth section is a possible analysis of -*ač* nouns according to Roy & Soare's eventivity tests and Alexiadou and Schäfer's syntactic model of word formation. The sixth section provides some concluding remarks resulting from the analysis of -*ač* nouns and applying the syntactic approach to word formation in the Distributed Morphology framework.

For the purposes of my investigation, I collected a list of 567 nominals with the suffix -*ač* from two Croatian corpora (*Croatian Language Repository* and *hrWaC*). I considered this data informative and tentative only, and used it as additional support for data approved by speakers' intuition or data described in reference books. For a completely realistic picture of the usage of -*ač* nouns, all Croatian corpora would have to be searched and other methods employed.[1]

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[1] One of the reviewers has warned me that the results of the searches of the data from these two corpora are not fully reliable. I agree with him in this respect, since neither of these corpora, due to their imperfections and shortages, could provide us with real insight into the state of usage of nominals with the suffix -*ač*. For this reason, I consider my data highly tentative and am aware that the real picture could be somehow different. The reviewer has also advised me to compare the two corpora in order to see why they might have given different results. Since my aim is not to provide precise and definite data about the usage of nominals with the suffix -*ač*, but only to approach the problem from a grammatical point of view and see what is actually possible and what is not, I believe the precise description of the corpora used here and a quantitative data analysis is not necessary.

2. Theoretical framework

Croatian nominals with the suffix -*ač* will be analyzed in accordance with the syntactic approach to word formation proposed for -*er* nominals in the Distributed Morphology framework (Alexiadou & Schäfer 2010). The basic assumptions on the argument structure, meaning, and eventive properties of agentive nouns are founded on Grimshaw (1990), Rappaport Hovav & Levin (1992), Larson (1998), and Roy & Soare (2014).[2] Since their assumptions on the eventivity of nominals will be introduced later in regard to testing the eventive structure of -*ač* nominals (section 4), this section will mainly discuss Alexiadou & Schäfer's (2010) model, which is used as the basic model within which Croatian nominals are analyzed. Additionally, Roy & Soare's (2014) model will be compared to Alexiadou & Schäfer's analysis.

Alexiadou & Schäfer (2010) propose that the whole group of -*er* nominals are subdivided into two major classes. The first class contains nominals that obey the External Argument Generalization (EAG).[3] These can be either episodic (*a saver of lives, a grinder of coffee*) or dispositional (*a life-saver, a coffee-grinder*). The second class contains nominals that do not obey the EAG (*broiler, diner*). Contrary to Rappaport Hovav & Levin (1992), they assume that event interpretation is not linked to the presence of arguments. Both episodic and dispositional nominals (the first class) include events, but their events are bound by different aspectual operators that are responsible for interpretational differences and the ability of arguments to remain unexpressed.

Alexiadou and Schäfer adopt the view of word formation proposed by the Distributed Morphology approach (Marantz 2001), which assumes that words are derived through the merging of roots with functional categories. Words are not primitives in this framework, and they consist of category-neutral roots and features, which are part of a functional vocabulary. Functional heads determine the root's syntactic category. Derivational endings (e.g., -*er* in English or -*ač* in Croatian) belong to the functional vocabulary. Both classes of -*er* nominals include a functional category *n*, which is either

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[2] I am especially grateful to one of the reviewers for drawing my attention to the paper by Roy & Soare (2014).

[3] The External Argument Generalization is a principle introduced in Rappaport Hovav & Levin (1992, 127), and used by Alexiadou & Schäfer (2010). According to this principle, the interpretation of -*er* nouns corresponds to the interpretation of the external argument of the underlying verb, and these nouns are better characterized by the term *external argument* than the term *agentive nouns*.

merged directly with a root (non-EAG nominals) or above the functional verbal category (EAG nominals). This type of analysis originates from two cycles for word formation proposed by Marantz (2001). These two cycles include (i) a merger with roots and (ii) a merger above functional heads. A merger with a root (i) implies: a. the negotiated (apparently idiosyncratic) meaning of the root in the context of the morpheme, b. apparent semi-productivity (better with some roots than others), c. the meaning of the construction cannot be an operation on "argument structure", d. a corollary of the previous implication: it cannot involve the "external argument" of the verb. A merger above functional heads (ii) implies: a. a compositional meaning predicted from the meaning of the stem, b. apparent complete productivity, c. the meaning of the structure can involve an apparent operation on argument structure, d. it can involve the external argument of a verb.

Alexiadou & Schäfer's (2010) analysis of *-er* nominals makes use of structural decomposition, which is part of syntactic approaches to nominalization. The derivation of nominals that obey EAG (episodic and dispositional) is performed by merging the root with several functional categories (vP, VoiceP, AspP, nP). The structure of episodic and dispositional *-er* nominals proposed by Alexiadou & Schäfer is illustrated in (1) and (2).

(1)   Episodic nominals:

   [$_{nP}$ *-er* [$_{AspP}$ AspEPISO [$_{VoiceP}$ X [Voice] [$_{vP}$ v (e) [$_{RootP}$ Root Object]]]]]

(2)   Dispositional nominals:

   [$_{nP}$ *-er* [$_{AspP}$ AspDISPOS [$_{VoiceP}$ X [Voice] [$_{vP}$ v (e) [$_{RootP}$ Root]]]]]

The head n is a nominalizer, and its main function is to introduce the R-argument. The spell-out of the n head is *-er* because the R-argument in n binds the external argument X located in [SpecVoice]. According to Alexiadou & Schäfer (2010), this binding is the source of the External Argument Generalization. The head *Voice*, a semi-functional head, is responsible for introducing the external argument. The head v introduces an event variable that is bound by an aspectual operator hosted by Asp. The presence of the v-head in the *-er* nominal's structure is proven by verbalizing morphology, event semantics, and productivity. Verbalizing morphology is recognizable in *-er* nominals derived from denominal verbs. These nominals have the suffixes *-ize, -ate*, and *-ify* incorporated in their structure (*colon-iz-er, dict-at-or, satis-fi-er*), which Alexiadou & Schäfer consider spell-outs of the v-head. Event semantics is proved by the non-intersective adjectival modification of nominals. Finally, the derivation of nominals that obey

EAG is fully productive and transparent in English. The aspectual differences between episodic and dispositional nominals (the interpretation of nominals and the availability of arguments) are captured by assuming two different aspectual heads in their structure (AspEPISO and AspDISPOS), which host different aspectual operators.

An episodic noun refers to someone or something who or which has actually participated in the action expressed by the verb base, whereas a dispositional noun refers to someone intended for a specialized job or function. An episodic interpretation requires the presence of an argument, which is interpreted as a quantity element. The authors follow Borer (2005) in assuming that quantized objects must be located in a specific projection, in this case in AspEPISO. Dispositional nominals contain a dispositional operator in the AspDISPOS head. These nominals do not need to project the internal argument of a base verb, which is non-specific and never interpreted as quantized, but this argument is semantically available. The interpretation of the internal argument of a dispositional noun is, in fact, generic, and it must include a bare plural. Alexiadou & Schäfer conclude that it is common to assume that the licensing of a bare noun phrase proceeds differently from that of quantized objects.

Similarly, Roy and Soare (2014) claim that the dispositional event includes a generic operator, and that the episodic nominal includes an existential operator. Episodicity vs. genericity is co-extensive with (non-)specificity. So the argument of an episodic nominal is specific, whereas the argument of a dispositional nominal is non-specific.

For non-subject -*er* nominals, i.e., nominals that do not obey the EAG, Alexiadou & Schäfer assume a simpler structure with the root directly embedded under the *n* node.

(3)   Non-subject nouns:
       [$_{nP}$ n -*er* [Root]]

Nominals like *broiler, scratcher*, or *diner* are not productive derivations, have an idiosyncratic interpretation, and lack verbalizing morphology (the suffixes -*ize, -ate* and -*ify* are not visible in their structure). In fact, object-denoting -*er* nominals are lexicalized.

3. Nominals with the suffix *-ač* in Croatian

3.1. Basic features

Nominals with the suffix -*ač* are normally derived only from verbs, and derivatives from nonverbal bases are exceptions (Babić 1991).[4] Examples (4), (5), and (6) illustrate deverbal, denominal, and deadjectival derivations.

(4)   plivač 'swimmer' ← pliv-ati (verb) 'to swim'

(5)   tenisač 'tennis player' ← tenis (noun) 'tennis'

(6)   golač 'nudist/slug' ← gol (adjective) 'naked, nude'

My own investigation has confirmed that the total number of nonverbal derivatives is very small, a fact that has already been noted in the literature (cf. Babić et al. 1991). The suffix -*ač* mainly attaches to imperfective verb bases (7), and to perfective bases (8) to a lesser extent:[5]

(7)   jahač 'rider' ← jah-ati (impf.)[6] 'to ride (horseback)'

(8)   naslonjač 'armchair' ← naslon-iti (se) (perf., refl.) 'to lean'

The nominal suffix -*ač* is referred to as the second most important suffix (immediately after the suffix -*telj*, specially popular in the present-day language) for deriving agentive nouns from verb bases in Croatian (Babić 1991; Barić et al. 1995). Agentive nouns can also be derived using the suffixes -*(a)c*/-*l(a)c*, -*ar*, -*ik*/-*nik*, and -*telj*.

Nominals with -*ač* are mostly derived from transitive bases, and to a lesser degree from intransitive bases, a fact also confirmed in Babić (1991)

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[4] Babić (1991), in his comprehensive book on word formation in Croatian, claim that denominal nouns with the suffix -*ač* are older than deverbal ones.

[5] Among the 532 deverbal nouns I compiled, 486 nouns are derived from imperfective bases, 35 from perfective bases, and six from biaspectual bases. Babić (1991) also claims that 2 to 6% of nominals are derivatives from perfective verbs, which roughly corresponds to my results, or is even a little less than I calculated.

[6] Abbreviations: acc. = accusative; dat. = dative; gen. = genitive; impf. = imperfective; inf. = infinitive ending; IS = imperfective suffix; loc. = locative; past. part. = past participle; perf. = perfective; pl. = plural; pref. = prefix; pres. = present; refl. = reflexive; sing. = singular; Tv = thematic vowel; CEN = Complex event nominals.

and through my own investigation of nouns.[7] Nouns derived from perfective intransitive bases and from unaccusative bases of both aspects are almost nonexistent. There are no such -ač derivatives as in (9) and (10)–(17).

(9) *skočač ← skočiti (perf.) 'jump'

(10) *dolazač ← dolaziti (impf.) 'come, arrive'

(11) *nestajač ← nestajati (impf.) 'disappear'

(12) *tonač ← tonuti (impf.) 'sink'

(13) *rastač ← rasti (impf.) 'grow'

(14) *postajač ← postajati (impf.) 'become'

(15) *umirač ← umirati (impf.) 'die'

(16) *vrijač ← vreti (impf.) 'boil'

(17) *zrijač ← zreti (impf.) 'ripen'[8]

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[7] 398 nouns are derived from imperfective transitive verbs, 46 are formed from imperfective intransitive verbs, 33 are derived from perfective transitive bases, and only two nouns are derived from perfective intransitive verbs (the nominals *poskakač* and *prilegač*, the first one referring to a person who jumps while dancing in a round (*kolo*) and the second one to a kind of bird). Both belong to archaic vocabulary and are also attested only once each in the Croatian Language Repository. It is possible that investigating a third Croatian corpus would provide different results.

[8] All of the ungrammatical nominals in (10)–(17) are derived from verbs whose semantically correlated verbs in English and other languages are considered unaccusatives. A test for unaccusativity in Croatian is the ability to use the L-participle (perfect participle) as a premodifier (cf. English prenominal modification with participles, which is considered an unaccusativity test according to Levin & Rappaport Hovav 1995, 11): *novo pridošli članovi* 'newly arrived members', *pridošao, pridošla* (perfect participle) ← *pridoći* (perf.) 'come'; *nestale čarape* 'missing socks', *nestao, nestala* (perfect participle) ← *nestati* (perf.) 'disappear'; *potonuo brod* 'sunken ship', *potonuo, potonula* (perfect participle) ← *potonuti* (perf.) 'sink'; *narasla djeca* 'grown children', *narastao, narasla* (perfect participle) ← *narasti* (perf.) 'grow'; *naglo postali starci* 'people who aged suddenly' 'suddenly become elderly', *postao, postala* (perfect participle) ← *postati* (perf.) 'become' *umrla rodbina* 'dead relatives'; *umro, umrla* (perfect participle) ← *umrijeti* (perf.) 'die'; *zavrela juha* 'boiled soup', *zavreo, zavrela* (perfect participle) ← *vreti* (perf.) 'boil'; *pali anđeo* 'fallen angel', *pao, pala* (perfect participle) ← *pasti* (perf.) 'fall'. The problem with the examples above is that all of the prenominal participles are derived from perfective verbs, whereas the ungrammatical examples in (10)–(17) are derived from imperfective verbs.

The only counterexample to the second nonexistent type (nominals derived from unaccusative verbs) is the noun *padač* 'one who falls' which is formed from the presumably unaccusative imperfective verb *padati* 'to fall'.

The meaning of nominals with the suffix *-ač* is mostly described in Croatian textbooks and grammars as agentive and instrumental. Agentive meaning, in a broad sense, comprises general agents and occupation names (including sports players and hobbyists). Some animate, nonagentive nouns refer to animals. Inanimate nouns include general causers, instruments in a specific sense (tools, devices and gadgets), vehicles, different specific objects, plants, and substances. Examples of different semantic categories that can be expressed by *-ač* nominals are given below:

(18) obmanjivač   'deceiver'   general agentive meaning
      udvarač   'wooer'
      pušač   'smoker'

(19) prodavač   'salesman, seller'   agents and occupations
      trkač   'runner'

(20) kasač   'trotter'   animals
      kovač   'John Dory'

(21) otvarač   'opener'   simple tools
      upaljač   'lighter'

(22) minobacač   'mortar'   [military] devices and gadgets
      odašiljač   'transmitter'
      ispravljač   'rectifier'

(23) e-čitač   'e-reader'

(24) nosač (zrakoplova) 'aircraft carrier'   vehicles

(25) naslonjač   'armchair'   specific objects

(26) omekšivač   'softener'   substances

Although nominals with the meanings listed above are all attested in corpora or reference books, it must be emphasized that nominals with the

suffix -*ač* mainly refer to persons and instruments in the specific sense.[9,10] Most papers that analyze agentive suffixes in English and other languages subsume all inanimate meanings under the instrumental (Rappaport Hovav & Levin 1992; Alexiadou & Schäfer 2010).

Similar to what has been observed for English by several authors (Rappaport Hovav & Levin 1992; Alexiadou & Schäfer 2010), Croatian nominals with the suffix -*ač* also have an interpretation of an external argument regardless of their semantic role. In addition to agents (*plivač* 'swimmer') and instruments (*otvarač* 'opener') cited above, we also find e.g., experiencers among nouns with -*ač*, see (27) and (28):

(27) slušač 'listener'

(28) kušač 'taster'

Nominals with an internal-argument interpretation are almost nonexistent among the -*ač* nouns (an exception is the noun *padač* 'one who falls'). The interpretation of -*ač* nominals in Croatian is strongly reminiscent of the interpretation of -*er* nominals in English (and of nominals in some other languages as well). The correlation between the Croatian suffix -*ač* and the English suffix -*er* is based on several properties:

(i) the primarily agentive and instrumental function of the suffix;

(ii) it is a mostly deverbal suffix, but smaller number of nominals of denominal and other origin;

(iii) it mostly denotes external arguments, and does not derive nominals from unaccusative verbs;

(iv) the same noun can denote both agents and instruments.[11]

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[9] Out of the first 200 (of all 567) nouns, 139 nouns refer to persons (mostly with agentive interpretation), 60 refer to instruments, 26 have both meanings (instruments and persons), 12 refer to animals, and 2 refer to plants. The sum of the listed nouns is not exactly 200, since most of them refer to more than one entity.

[10] The term *instruments in the specific sense* refers to all kinds of tools, devices, gadgets, machines, and vehicles. *Instrument in the broader sense* includes all other specific objects (food, furniture, clothes, etc).

[11] One of the reviewers has asked why other Croatian agentive suffixes would not qualify as correlates of the suffix -*er*. This has, in a way, compelled me to define similarities to English more precisely, and to delimit the properties of the suffix -*ač* from other agentive suffixes in Croatian. Agents are also derived with the suffix -*ar*, but its deverbal nominals refer only to agents, not to instruments (denominal derivatives do refer to objects). The suffix -*telj* also serves as an agentive suffix, but denote

The fourth property can be illustrated by the following examples for Croatian (29a–c) and English (29a–d):

(29) a. bacač 'thrower'   agent or instrument (javelin thrower and mortar)

      b. nosač 'carrier'   agent or instrument (water carrier and aircraft carrier)

      c. čistač 'cleaner'   agent or instrument (person who cleans and (steam) cleaner)[12]

      d. grinder agent or instrument   (Rappaport Hovav & Levin 1992)

The Croatian examples in (29a–c), as well as their counterparts in English, are ambiguous between agentive and instrumental interpretations. English *-er* nominals cover more semantic categories than Croatian *-ač* nouns. There are no locational Croatian nouns derived from verbs, such as e.g., *diner* or *sleeper*,[13] and nouns with *-ač* are never the names of inhabitants, such as e.g., *Londoner* in English. It is apparent that Croatian nouns show more regular behavior with regard to the External Argument Generalization (EAG) and less diversity in meaning. The fact that semantically cognate suffixes do not always cover exactly the same range of meanings was noted by Alexiadou and Schäfer (2010) for German. The reason for this, suggested in Beard (1990), is that Croatian as a Slavic language has a greater number of suffixes than the Germanic languages, and so specific suffixes in Croatian exhibit less polysemy in meaning (Croatian has other suffixes for originative and locational nouns, as well as other agentive and instrumental suffixes).

   On the basis of my preliminary investigation of 567 nouns, it seems that *-ač* nominals derived from perfective verbs are more prone to denote

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instruments more exceptionally. Unlike the suffix *-ač*, the suffix *-telj* is solely a deverbal suffix. The suffix *-(n)ik* is in most cases a deadjectival suffix, but is sometimes also considered a deverbal suffix, and like with the suffix *-ač*, nouns derived using this suffix can refer to both instruments and agents. However, the striking difference between these two suffixes lies in the ability of the suffix *-(n)ik* to denote internal arguments (*kažnjenik* 'convict', *usvojenik* 'adoptee') that originate from the suffix's adjectival origin. The suffix *-(a)c* derives nominals from adjectival, nominal, and verbal bases, but derivatives with this suffix can refer to agents, instruments, and to nominals that denote the result of the action described by the verb (*poljubac* 'kiss'), making it considerably different from the suffix *-ač*. In addition, this suffix is no longer productive. The suffix *-l(a)c* is considered a variant of the suffix *-(a)c*, and its special feature is that it contains part of the past participle (*l*). Thus, neither of these exhibit similarities to the suffix *-er* to the same extent as the suffix *-ač* does.

[12] The noun *čistač* can be shortly used for various agents (*čistač cipela* 'shoe cleaner', *čistač ulica* 'street cleaner') and devices (*parni čistač* 'steam cleaner').

[13] As far as I know, there is only one noun with the suffix *-ač* that refers to a kind of location – the nominal *diskač* 'disco club' that is formed from a noun.

instruments than those derived from imperfective verbs. Also, they often have specialized or idiosyncratic meanings (-*ač* nominals *naslonjač* 'arm-chair', *osigurač* 'fuse', and *prilegač* 'kind of bird' have no general agentive meaning, while *upaljač* 'lighter' has no agentive, only instrumental meaning). We could tentatively conclude that the meaning of the latter nouns is lexicalized. It is interesting to observe that all nominals in my sample of -*ač* nouns that refer to plants, food, or locations are of denominal origin (*bonkač* 'candy', *kolač* 'cake', *gorač* 'St. John's Wort', *buhač* 'chrysanthe-mum', *diskač* 'disco').

3.2. The internal morphological structure of the deverbal nouns

In this section, I will consider the internal morphological structure of -*ač* nouns in detail to see whether we can find additional proof for the assumption of functional verbal layers.

It is a well-known fact that, as with other Slavic languages, Croatian verbal forms contain morphological markers of aspect, which can be either perfective or imperfective.[14]

The lexical aspect of a verb can be changed by imperfectivization or perfectivization – the former is realized through suffixation and the internal change of the root, whereas the latter is realized through prefixation or suffixation (Babić 1991; Šojat et al. 2012; Marković 2012; Šojat et al. 2013).

An important feature of -*ač* nominals (and some other deverbal nouns in Croatian) is that, in most cases, morphological aspectual markers of the underlying verbs are recognizable in the derived noun. However, there are some nominals for which it is difficult to determine if they have been derived from a perfective or imperfective base. These are nominals derived from verbs not having either aspectual suffixes or prefixes (they consist of a verb root and a thematic vowel).[15]

First, I will list the cases in which the aspect of the base is clearly visible (aspectual pair derived by suffixation, change in a root vowel, and prefixation), and then the cases where the aspect on the base is not visi-

[14] The verbs can also be biaspectual, which is not relevant for this discussion. See more on derivational relations between imperfective and perfective verbs in Šojat et al. (2012).

[15] Various authors refer to this unit by different terms: thematic suffix (Marković 2012), conjugational suffix (Šojat et al. 2012), thematic morpheme, suffixal mor-pheme (Bošnjak Botica 2011). The term vowel is misleading since sometimes the "thematic vowel" comprises more morphological material than just a vowel but it is used here for traditional reasons.

ble. Thereafter I will summarize all of the observed data. If an -*ač* noun
is derived from an imperfective verb that has itself been derived from a
perfective verb through suffixation (the suffix -*iv*), the aspect of the un-
derlying verb is easily recognizable in the derived -*ač* noun. Note that, in
the examples (30) and (31) -*iv*- is an imperfective suffix, -*i*- and -*a*- are
so-called thematic vowels, and -*ti* is an infinitive ending. Perfective verbs
are illustrated in the (a) examples, imperfective verbs in the (b) examples,
while in the (c) examples there are -*ač* nouns derived from imperfective
verbs whose structure contains the imperfective suffix -*iv*.

(30) a. ovlaž-i-ti 'moisten' (perf.)

    b. → ovlaž-**iv**-a-ti 'moisten' (impf.)
        moist-IS-Tv-inf.

    c. → ovlaž-**iv**-ač 'moisturizer'

(31) a. za-slad-i-ti 'sweeten' (perf.)

    b. → za-slađ-**iv**-a-ti 'sweeten' (impf.)
        pref-sweet-IS-Tv-inf

    c. → zaslađ-**iv**-ač 'sweetener'

The aspect of the base verb is also recognizable in -*ač* nouns derived from
either perfective or imperfective verbs that derive the opposite aspectual
pair through a change in the root vowel. Note that, in the example (33),
the perfective verb *osvojiti* 'conquer' is derived through a change of root
vowel, but the perfective and imperfective verb differ also in their thematic
vowels (-*i*- and -*a*-).

(32) a. om**o**tati (perf.) 'wrap'

    b. → om**a**tati (impf.) 'wrap'

    c. om**o**tati (perf.) → om**o**t-ač 'wrapper, shield, cover'

(33) a. osv**o**j-*i*-ti (perf.)

    b. → osv**a**j-*a*-ti 'conquer' (impf.)

    c. osv**a**j-a-ti 'conquer' (impf.) → osv**a**j-ač 'conqueror'

The aspect of the base is also visible in -*ač* nominals derived from perfective
verbs which are derived from imperfective verbs through prefixation:

(34) a. pal-i-ti (impf.) 'light, fire' → **u**-pal-i-ti (perf.) 'light'

   b. **u**-pal-i-ti (perf.) 'light' → **u**pal-jač[16] 'lighter'

In some cases, the aspect marker is not visible in the derived noun since the suffix is attached to the bare verbal root. However, the noun *plivač* 'swimmer' in (35) is considered to be derived from an imperfective verb, since its perfective pair is derived through prefixation (the noun ending in -*ač* does not have a prefix).

(35) a. pliv-a-ti 'swim' (impf.)
       swim-Tv-inf.
       → pliv-ač 'swimmer'

   b. za-pliv-a-ti (perf.) 'start swimming'
      pref-swim-Tv-inf.

There are nominals which are derived from a verb whose aspectual pair differs only in the thematic vowel. In such case, it is difficult to determine if the nominal is derived from the imperfective or the perfective verb. An example is the nominal *bacač* 'thrower' in (36):

(36) bac-ač 'thrower'   ← bac-*a*-ti 'throw'(impf.)
                         ← bac-*i*-ti 'throw' (perf.)

For the aspectual pair of verbs in example (36) it is difficult (or impossible) to determine whether the imperfective is derived from the perfective verb or the other way round. The perfective verbs in (30) and (31) have an imperfective pair derived through an aspectual suffix (-*iv*), and the imperfective verb also differs from the perfective verb in its thematic vowel (a/i). Unlike the verbs *ovlažiti* 'moisten' (perf.) and *ovlaživati* 'moisten' (impf.) in (30a) and (30b), the verbs *baciti* 'throw' (perf.) and *bacati* 'throw' (impf.) in (36) differ only in their thematic vowels (i/a), which, in this case, also expresses an aspectual difference.

   This means that the morphological structure of -*ač* nouns either includes only a root and the suffix -*ač*, or includes aspectual markers (suffixes or prefixes), too. It seems, however, that -*ač* nouns do not select a thematic vowel together with a root and aspectual markers. This is clearly illustrated by the verbs in (36): in their structures the verbal aspectual marker and the thematic vowel coincide.

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[16] The suffix -*jač*, present in examples (8) and (34), is considered a variant of the suffix -*ač* as a result of some phonological adjustments.

At first glance, the vowel *a* in the suffix *-ač* can be confused with the thematic vowel *a*, since many verbs have the vowel *a* as a thematic vowel in their infinitive or in both the infinitive and the present-tense forms (for example, *bacati* (inf.), *bacam* (1sing.pres.) 'throw'→ *bacač* 'thrower'; *birati* (inf.), *biram* (1sing.pres.) 'choose'→ *birač* 'voter'; *plesati* (inf.), *plešem* (1sing.pres.) 'dance'→ *plesač* 'dancer'; *jahati* (inf.), *jašem* (1sing.pres.) 'ride' (horseback) → *jahač* 'rider').

If we take a closer look at the data below, we can see that there are many verbs with thematic vowel (or suffix) other than *-a-* that also serve as the basis for an *-ač* derivation:

(37) bušač 'driller' ← buš-*i*-ti 'drill' (impf.)

(38) krojač 'tailor' ← kroj-*i*-ti 'tailor' (impf.)

(39) vozač 'driver' ← voz-*i*-ti 'drive' (impf.)

The fact that *-a-* in the suffix *-ač* is not identical with the thematic vowel *-a-* can also be proven through denominal derivatives which do not contain a verbal root (*tenis-ač* 'tennis player' ← *tenis* 'tennis').

In addition to other tests, on the basis of recognizing verbalizing suffixes (*-ize, -ate* and *-ify*) in the structure of *-er* nouns, Alexiadou and Schäfer conclude that English *-er* nominals include *v*P projection. If we think of thematic vowels as being verbalizers in Croatian as suggested in Bašić (2010), and assume that they can be instances of *v*, we cannot accept the analysis of Alexiadou and Schäfer completely. On the other hand, according to the same analysis, eventivity is also connected to *v*, which can be assumed on other (semantic) grounds. Aspect heads, on the contrary, are morphologically justified, but can be denied for other reasons.

4. Eventivity of nominals and complement structure

Rappaport Hovav and Levin (1992) assume that the whole group of *-er* nominals can be divided into two classes with regard to eventive properties. In accordance with Grimshaw (1990), Rappaport Hovav and Levin (1992) claim that event nominals inherit the complement structure of the base verb, while nonevent nominals do not. The *-er* nominals correspond to the external argument of the base verb, whatever its semantic role is (External Argument Generalization, EAG). They are not derived from unaccusative verbs. Although the authors mostly link the agentive interpretation with

eventive reading, and instrument interpretation with noneventive reading, they note that there are nonagentive nominals which are eventive and inherit complement structure as well as agentive nominals which are noneventive.[17] The fact that agentive/instrumental interpretations do not coincide with eventive/noneventive interpretations will be later demonstrated for Croatian. As has already been stated, Alexiadou and Schäfer (2010) also distribute -*er* nominals into two major classes (those that obey the EAG and those that do not obey the EAG). Both episodic and dispositional nominals of the first class have an event within their semantic structure regardless of their animacy. However, the nature of the event differs in respect to nominal interpretation (episodic and dispositional). Both can have complement structure, but dispositional nouns can leave this structure unexpressed.

On the other hand, Roy and Soare (2014) (on the basis of data from French) claim that both approaches are partially correct and partially incorrect. They differentiate between instruments, which are never eventive, and eventive nouns (always animate), which can involve episodic and generic events.[18]

Many tests for the eventivity of nouns have been proposed in the literature. The foremost and best-known are tests introduced by Grimshaw (1990) that primarily check the eventivity of nominalizations (determiner system, aspectual modifiers, agent-oriented adjective modifiers, modification by *frequent* etc.). Some of them can be applied to -*er* nominals in English and cognate nominals in other languages. Larson (1998) introduced intersective vs. nonintersective readings of adjectives as an eventivity test for deverbal nouns. Recently, Roy and Soare (2014) summarized Grimshaw's and Larson's tests related to adjectives and expanded on them using distinctions made by Gehrke & McNally (2012) (cited in Roy & Soare 2014). Roy and Soare (2014) elaborated on fine-grained adjectival tests that can reveal an event within a nominal: modification by frequency adjectives (FAs) and big-type adjectives (BAs) with internal reading.[19] I will apply some of their tests to Croatian deverbal nouns with the suffix -*ač*.

[17] "Although there are agentive nonevent -*er* nominals, nonevent nominals more often take on an instrumental, rather than an agentive interpretation. We assume that the reason for this has to do with the nonlinguistic, or perhaps non-grammatical fact that it is usually instruments and not people that are defined as 'intended to do' a particular action." (Rappaport Hovav & Levin 1992, 134)

[18] In addition to these approaches, there are several others that have completely different views of the eventivity of nouns (some of them are listed in Roy & Soare 2014).

[19] I will use their terminology to differentiate between two groups of adjectives (FAs for frequency adjectives, BAs for other adjectives with non-intersective readings).

4.1. Eventivity of *-ač* nouns

Grimshaw (1990) argues that complex event nominals (CENs) can be modified by aspectual modifiers (*in an hour, for three hours*). As is well known from English, agentive nominals differ from complex eventive nominals in that they cannot be modified by aspectual modifiers. The same is true of Croatian *-ač* nouns, which co-occur neither with imperfective nor with perfective aspectual modifiers (cf. e.g., Bašić 2010 for Serbian complex event nominals). A complex event nominal derived from an imperfective verb is provided in (40a) and a correlated agentive nominal is provided in (40b). A complex event nominal derived from a perfective verb and its corresponding *-ač* nominal are illustrated in (41a) and (41b). The examples show that *-nje* nouns (complex event nominals) can be accompanied with appropriate aspectual modifiers, whereas *-ač* nouns cannot.

(40) a. Markovo ispitivanje   učenika   **tri   sata** ← ispitivati (impf.)
          Marko's examination-impf. students-gen three hours   'examine'
          'Marko's examination of students for three hours'

   b. *ispitivač učenika   **tri   sata** ← ispitivati (impf.)
          examiner students-gen three hours
          'an/the examiner of students for three hours'

(41) a. onečišćenje   prostora **za tri   sata** ← onečistiti (perf.) 'contaminate'
          contamination-perf room-gen for three hours
          'contamination of the room/area **in three hours**'

   b. *onečistač   prostora   **za tri   sata** ← onečistiti (perf.)
          contaminator room/area-gen for three hours
          'a contaminator of the room/area in three hours'

The inability of *-ač* nominals to co-occur with aspectual modifiers is not completely expected if we bear in mind that nouns in *-ač* generally show aspectual markers.

   Modification by agent-oriented adjectives is another event test proposed by Grimshaw (1990). She specifically claims that the insertion of an agent-oriented adjective requires that the modified noun have a complement structure. Croatian agent-oriented adjectives, represented here with the adjective *namjeran* 'deliberate, intentional', can modify complex event nominals and at least some *-ač* nominals as well. The noun phrase in example (42) contains the complex event nominal *obmanjivanje* 'deceiving/beguiling' modified with *namjeran* 'deliberate, intentional', which re-

sults in the eventive reading interpretation 'someone (politicians) has deliberately deceived the public'.

(42) **namjerno obmanjivanje** javnosti   od strane političara
     deliberate deceiving   public-gen of side   politicians
     'deliberate deceiving of the public by politicians'

(43) jer   podržava   najveće **namjerne obmanjivače**   javnosti
     since supports-3sg biggest deliberate deceivers-acc.pl public-gen.sing
     'since (he) supports the biggest deliberate deceivers of the public'

The nominal phrase *(najveći) namjerni obmanjivači javnosti* 'the (biggest) deliberate deceivers of the public' in example (43) has the same kind of eventive reading. When the same adjective is added to a dispositional (44) or an instrument *-ač* nominal (45), the resulting nominal phrase is ungrammatical:

(44) *namjerni brijač
     'deliberate barber'

(45) *namjerni otvarač
     'deliberate opener'

The adjective *frequent* and other frequency adjectives are considered to signal an event within a nominal (Grimshaw 1990; Rappaport Hovav & Levin 1992; Larson 1998; Roy & Soare 2014). Larson (1998) elaborated on the idea of a distinction between intersective and non-intersective interpretations of adjectives as crucial for event identification within a nominal. An event within a deverbal nominal is identified by the nonintersective internal interpretation of some adjectives. Roy & Soare (2014) proposed that an event in nominals can be identified by two pairs of adjectives: FAs (frequency adjectives) and BAs (big-type adjectives), but also only an internal reading of both types of adjectives is relevant for event interpretation. They point out that both types of adjectives can provoke three different interpretations: adverbial, generic, and internal. Larson (1998) includes adverbial and generic interpretations under external interpretation.

     Also, Roy and Soare (2014) show that only episodic (eventive) *-eur* nominals can be modified by frequency adjectives with an internal reading in French, whereas dispositional and instrument nominals cannot be modified by frequency adjectives with an internal reading. When they use the event-related adjective tests, they apply them to three groups of nominals: episodic (animate), dispositional (animate), and instrument, which is

appropriate for French. Following their analysis, I also separately applied event-adjectival tests to three groups of nominals in Croatian. However, it turned out that Croatian shows results that do not depend completely on animacy, but rather on a distinction between eventive and dispositional properties. Surprisingly, however, it seems that the group of nominals that denote what I refer to as instruments in the specific sense (tools and devices) are in a way special, showing semantic behavior somewhat closer to the French instruments.

For Croatian, we can single out the adjectives *čest* 'frequent', *povremen* 'occasional', *stalan* 'constant', and *neprekidan* 'continuous' as frequency adjectives which signal eventive properties within a nominal. The fact that they function as frequency adjectives can be additionally proven by their co-occurrence with CENs in Croatian (mostly nouns derived by the suffix *-nje*, cf. e.g., Bašić (2010) for Serbian, which does not differ in this respect):

(46) često ispitivanje studenata
      'the frequent examination of students'

(47) povremeno bacanje papira u koš
      'the occasional throwing of paper into a basket'

Roy and Soare (2014) have demonstrated adverbial, generic and internal interpretations of FAs for French and English. It seems that all three interpretations of frequency adjectives are found in Croatian as well. Only the external (adverbial) and internal reading are illustrated in the following example (48), (48b) is external and (48c) is internal interpretation. However, it should be mentioned that not all Croatian speakers accept (b) as an interpretation of (a).

(48) a. Povremeni šetač   je prolazio   kraj   nas.
          occasional walker is passed-impf.past.part beside us
          'An occasional walker passed us by.'
      b. Occasionally, a walker passed us by.
      c. A walker, who walks occasionally, passed us by.

The adjectives *čest* 'frequent', *povremen* 'occasional', and *stalan* 'constant' can also modify other agentive nominals with *-ač*, whereas *-ač* nouns derived from transitive verbs are more natural with the addition of complements:

(49) povremeni berač (ˀgljiva/ˀjagoda)
      occasional picker mushrooms-gen.pl/strawberries-gen.pl
      'an occasional picker of mushrooms/strawberries'

(50) stalan   berač (ˀgljiva/ˀjagoda)
      constant picker mushrooms-gen.pl/strawberries-gen.pl
      'a constant picker of mushrooms/strawberries'

(51) česti   berač (ˀgljiva/ˀjagoda)
      frequent picker mushrooms-gen.pl/strawberries-gen.pl
      'a frequent picker of mushrooms/strawberries'

Also, nominals derived from intransitive verbs modified by FAs can more easily acquire an internal interpretation when accompanied by some sort of modification phrase:

(52) čest plivač (ˀna 100m)
      'a frequent swimmer (in the 100 meters)'

(53) povremeni trkač (ˀna druge pruge/maratona)
      'an occasional runner (of long distances/marathons)'

Although the nominal phrases *povremeni berač* 'occasional picker' and *čest plivač* 'frequent swimmer' are not ungrammatical without complements or modifiers, they acquire a doubtlessly internal interpretation when accompanied by complements and modifiers, a fact that could be considered an indicator of episodic interpretation.

If an animate *-ač* noun that predominantly refers to an occupation is modified with the adjective *čest* 'frequent', the resulting noun phrase is ungrammatical.[20]

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[20] At first glance, it seems that modification of dispositions with *stalan* 'constant' and *povremen* 'occasional' is more acceptable than the modification of the same nouns with the adjective *čest* 'frequent': ˀ*stalan*/ˀ*stalni brijač* 'constant barber'; ˀ*povremen*/ˀ*povremeni brijač* 'occasional barber'; ˀ*stalan*/ˀ*stalni prodavač povrća* 'constant seller of vegetables'; ˀ*povremen*/ˀ*povremeni prodavač povrća* 'occasional seller of vegetables'. When we consider these examples in greater detail, it seems that these adjectives in fact modify the state of working as a barber or vegetable seller, but not the action of shaving or selling, so it seems they do not relate to the event within the nominal, e.g., they do not have an internal interpretation.

(54) *čest(i)[21] brijač
    'frequent barber'

(55) *čest(i)   prodavač povrća[22]
    frequent seller-nom vegetables-gen.sing
    'a frequent vegetable seller'

It seems that *-ač* nominals denoting instruments in the specific sense (devices and tools) cannot be modified by frequency adjectives with an internal reading in Croatian (just as in French):

(56) *povremeni otvarač
    'occasional opener'

(57) *povremeni otvarač boca
    occasional opener bottles-gen.pl
    'an occasional bottle opener'

However, examples were found in which the eventive context enables an inanimate nominal in *-ač* to accept the FAs modification with internal reading. The noun *zagadivač* 'pollutant' in (58) has as its complement the genitive nominal *atmosfere* 'atmosphere', which forces an episodic (eventive) reading.[23]

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[21] Croatian has an indefinite and a definite form of masculine adjectives. *Čest* is an indefinite and *česti* a definite form of the adjective with the meaing 'frequent'. It would be interesting to see how indefinite/definite forms of adjectives influence the episodic/dispositional reading of the noun and to see if definite forms correlate with presence of arguments and frequency adjectives.

[22] The status of this genitive nominal is not completely clear. It is certainly not a definite argument, since when the plural genitive nominal as a complement to the noun denoting occupation is replaced by a definite singular genitive (a nominal accompanied with a demonstrative), the noun becomes episodic. It must be more precisely considered if plural genitive complements of occupational nominals have the status of complements or modifiers.

[23] The same is actually true for dispositions as well. The noun phrase *brijač čovjeka* 'a barber of a man' is not acceptable, since the nominal denoting the occupation 'barber' does not need a genitive phrase to further modify the occupational meaning. But, if the demonstrative *tog* 'this (gen.)' is added, the nominal phrase becomes acceptable (*brijač tog čovjeka* 'the barber of that man'), and gets an episodic interpretation.

(58) Vegetaciji velike štete nanosi fluorovodik,
(to) vegetation-dat great damage-acc.pl brings hydrogen fluoride-nom

iako nije tako čest **zagađivač** atmosfere.
although is.not so frequent pollutant atmosphere-gen
'Hydrogen fluoride does great harm to vegetation, although it is not such a frequent pollutant of the atmosphere.'

Although Roy and Soare (2014) claim that, at least in French, inanimate nouns are never modified with frequency adjectives, the above facts suggest that modification with frequency adjectives is strongly dependent on episodic reading, not on animacy.

The second class of adjectives for identifying the event inside nominals used by Roy & Soare (2014) is big-type adjectives. The authors say that the class of big-type adjectives (BAs) do not form a semantically coherent group. This group contains adjectives such as *big, small*, and *beautiful*. The defining feature of these adjectives is their twofold interpretation, mostly with deverbal nouns, as argued convincingly in Larson (1998). Some examples from Croatian:

(59) On je divan plesač.
'He is a beautiful/wonderful dancer.'
'a beautiful dancer (looks beautiful)'
'dances beautifully'

(60) On je veliki pjevač.
'He is a big singer.'
'a big singer (in size)'
'a great singer'

Larson (1998) points out that the adjective *beautiful* (in Croatian: *divan* 'beautiful/wonderful') in the first (intersective) interpretation modifies the agent (*x*) of the verb *dance* (in Croatian: *plesati*), whereas in the second (non-intersective) interpretation it modifies the event of dancing (*e*), hence signaling an event within a nominal. The above examples demonstrate that the same is true for some Croatian *-ač* nominals.

According to Roy & Soare (2014), nonintersective BAs can also have three interpretations: adverbial, generic, and internal. Again, only the internal interpretation is relevant for identifying events within nominals. Their paper shows that BA adjectives can modify episodic and animate dispositional nominals in French, which should be tested for Croatian as well. Examples (59) and (60) above show that the BA internal modification with animate *-ač* nominals is certainly possible if the noun has an episodic interpretation.

Nonintersective modification with internal reading of dispositional (animate) nominals is illustrated in the next example:

(61) U ovakvim   okolnostima   **mali prodavač**   ne može
     in this-loc.pl circumstances-loc.pl little seller-nom.sing not can

     konkurirati velikim trgovačkim   lancima.
     compete   big   commercial-dat.pl chains-dat.pl

     'In these circumstances, a **small seller** cannot compete with large chain stores.' (a seller who sells a small amount of products)[24]

BAs modification of Croatian instrument nouns gives somewhat confusing results regarding intersective/nonintersective interpretation (according to Roy & Soare, only intersective interpretations of BAs are possible with instruments in French). Some of adjectives show exclusively intersective or exclusively nonintersective interpretation and, as far as I can tell, only one adjective shows both.[25] Firstly, some of the big-type adjectives can acquire solely one interpretation when modifying instrument nouns (either intersective or nonintersective). The example (62) illustrates the first case. When the adjective *divan* 'beautiful/wonderful' is used with an instrument noun, only an intersective reading emerges:

(62) Dobila sam divan   držač za mobitel.
     got   am wonderful holder for mobile phone
     'I got a nice mobile phone holder (one that looks nice).'

Note that the same adjective *divan* 'beautiful/wonderful' was used to illustrate two interpretations with animate nouns.

The same is true of the adjective *velik* 'big', which is interpreted only intersectively when modifying an instrument noun denoting tools and devices:

(63) Našli smo veliki otvarač za boce.
     found are big   opener for bottles
     'We found a big (in size) bottle opener.'
     *'We found a great bottle opener.'

---

[24] Examples are difficult to find, since plural nominals are used more often, which should be avoided:

   (i) Mali prodavači plaćaju velike poreze.
        small sellers   pay   big   taxes
        'Sellers who do not sell much pay high taxes.'

[25] At this point, it must be stressed that the following data is perhaps dependent on individual choice, and should be checked for further investigation.

On the other hand, there is the adjective *dobar* 'good', which can have only a nonintersective interpretation with all -*ač* nominals (unlike in other languages), and consequently also with instrument nouns:

(64) Dobar grijač je zlata   vrijedan.
      good   heater is gold-gen.sing worth
      'A good heater is worth gold.' (heats well)

Secondly, the adjective *sjajan* 'shiny' can have both nonintersective (65) and intersective interpretation (66) when modifying an instrument noun:

(65) Dobila sam sjajan otvarač za boce.
      got   am shiny opener for bottles
      'I've got a great bottle opener.'

(66) Sjajan otvarač je najljepši.
      shiny   opener is nicest
      'A shiny opener is the most beautiful.'

It should be mentioned that some speakers as well as some dictionaries[26] (but not all) point out that there are two adjectives *sjajan* differentiated by the type of stress (*sjájan* 'shiny' and *sjâjan* 'great'). Others accept only one of these variants, which can have both meanings for them.

Roy and Soare (2014) take French examples similar to the Croatian examples in (63), (64) as a proof for the fact that instruments do not have eventive interpretation. In contrast to this, Alexiadou and Schäfer (2010) claim that instruments have eventive interpretation, on the basis of adjectival modification by adjectives that can have only a nonintersective reading (e.g., *dobar* 'good' in Croatian). They have based their conclusions partly on adjectival modification with the adjective *fast*, which can have only a nonintersective interpretation, as well as *brz* 'fast' in Croatian, illustrated here in the example (67).

(67) Puška ima brzi okidač.
      rifle   has fast trigger
      'The rifle has a quick trigger.' (fires quickly)

---

[26] *Hrvatski jezični portal* (Croatian language portal) records two adjectives *sjajan*, the first one means 'recording light' and the second one 'excellent, great', which differ in the type of stress.

On the basis of the tests laid out above, we can conclude that all tests, but one, have proven the eventivity of -ač nouns. The only exception is the test with aspectual modifiers, which is not considered relevant for nominal eventivity by all authors (Alexiadou 2001). The agent-oriented adjective *namjeran* 'deliberate' can modify -ač nominals with episodic interpretation, however this adjective cannot modify dispositions or instruments. In the same vein, animate nouns with an episodic interpretation can be modified with frequency adjectives. Animate dispositions and inanimate instruments (or dispositions in the sense of Alexiadou & Schäfer 2010) do not accept modification with frequency adjectives. It seems that at least some inanimate nouns can be modified by frequency adjectives, though this must be checked on more examples. These two tests speak in favor of difference between episodic and dispositional nominals in the sense of Alexiadou & Schäfer (2010).

BA modification with internal reading is possible with all animate -ač nouns (episodic and dispositional). Although BA modification with nonintersective internal reading of some instrumental nouns is possible (on which point Croatian differs strongly from French), there are some adjectives that cannot be interpreted as nonintersective and internal when modifying an instrument noun (*velik* 'big', *divan* 'beautiful').[27] Although all of the details of event-related adjectival modification in Croatian have not yet been completely elaborated, and instrument nouns are distinguished in some way, the results speak more in favor of the distinction between episodic and dispositional nominals established by Alexiadou & Schäfer (2010) than in favor of separating animate from inanimate nouns.

The Croatian examples in (49)–(51) also partly confirm the correspondence of argument structure and eventive interpretation of nominals proposed by Grimshaw (1990) some twenty-five years ago.[28]

4.2. Complement structure of the *-ač* nominals

Both episodic (68) and dispositional animate (69) -ač nominals can co-occur with genitive phrases:

(68) berač gljiva   u obližnjoj šumi
      picker mushrooms-gen.pl in nearby   forest
      'the/a frequent picker of mushrooms in the nearby forest'

---

[27] At least not with instruments in the specific sense.

[28] This specific fact is difficult to test in Croatian since in Croatian, it seems that not all genitive complements (complements of nouns) are of the same sort.

(69) prodavač karata
     seller   tickets-gen.pl
     'a/(the) ticket seller'

Instruments are also accompanied by genitive phrases:

(70) otvarač boca
     opener bottles-gen.pl
     'a/the bottle opener'

If the genitive noun is not part of the name of an occupation, plural genitive implies generic reading (71), while singular genitive is interpreted as episodic (72) by virtue of singular being more specific:

(71) berač jagoda
     picker strawberries-gen.pl
     'a picker of strawberries' – dispositional interpretation

(72) berač jagode
     picker strawberry-gen.sg
     'the picker of a strawberry' – episodic interpretation

Similar to French,[29] a genitive complement which occurs together with an instrument *-ač* nominal can be replaced with purpose *za*-phrase (*za* 'for') without considerable semantic change (73a,b), which is mostly impossible with dispositional nominals (74a,b):

(73) a. otvarač boca
         opener bottles-gen.pl
         'bottle opener'

     b. otvarač za boce
         opener for bottles-acc.pl
         'bottle opener'

(74) a. berač jagoda
         picker strawberries-gen.pl
         'picker of strawberries'

     b. *berač za jagode
         picker for strawberries-acc.pl
         'picker of strawberries'

---

[29] Roy and Soare (2014) demonstrate that in French, complements of instrument nouns usually realized by *de*-phrases can be replaced with purpose *à*-phrases.

The examples (71), (72) and (73a,b) presumably suggest that the episodic nominal has a more specific complement in Croatian. This is also the case with French, as argued by Roy and Soare (2014).

5. A possible analysis

The syntactic approach to word formation developed by Alexiadou and Schäfer (2010) within Distributed Morphology offers a good way to account for differences between deverbal and non-deverbal derivation of the *-ač* nouns. According to this approach, non-subject *-er* nominals in English (the nominals which do not obey EAG) are the result of merging a root directly with a functional head *n*. The derivation is unproductive and results in nominals which have idiosyncratic meanings and do not involve verbalizing morphology. Croatian non-deverbal nominals with the suffix *-ač* are at present rarely formed; only about twenty nouns out of 567 nominals are derived from denominal or deadjectival bases. Of these twenty non-deverbal nominals only three have an interpretation of external argument (e.g., *tenisač* 'tennis player', *košarač* 'basket weaver'). Other nominals refer to foods, plants, games, and location. Clearly, their meaning is idiosyncratic and they do not, for obvious reasons, include verbalizing morphology.

Nominals derived from verb bases with the suffix *-ač,* by virtue of its productive derivation, have the regular interpretation of an external argument, and their compositional meaning can be considered to be a product of merger above a functional head. Each newly-derived deverbal noun with the suffix *-ač* has an external-argument interpretation. As has been presented more thoroughly in section 2, according to Alexiadou & Schäfer (2010), *-er* nominals which obey EAG are either episodic or dispositional; their structure is repeated in (75) and (76).

(75) Episodic nominals:
      [$_{nP}$ *-er* [$_{AspP}$ AspEPISO [$_{VoiceP}$ X [Voice] [$_{vP}$ v (e) [$_{RootP}$ Root Object]]]]]

(76) Dispositional nominals:
      [$_{nP}$ *-er* [$_{AspP}$ AspDISPOS [$_{VoiceP}$ X [Voice] [$_{vP}$ v (e) [$_{RootP}$ Root]]]]]

Although a regular external-argument interpretation and eventive tests speak in favor of assuming verbal functional layers in the structure of Croatian *-ač* nominals, the question remains of precisely which verbal heads are justified for Croatian. Firstly, if we assume the presence of the *v* head, according to the same principles as in Alexiadou & Schäfer's model, we face

several problems. According to the DM approach, roots are unspecified for syntactic category, hence the presence of the *v* node must be proven by morphological material. Alexiadou and Schäfer (2010) claim that verbalizing suffixes (-*ize, -ate* and -*ify*) are spell-outs of the *v*-head in the structure of -*er* nominals in English. If we think of the thematic vowel as being a verbalizer in Slavic languages[30] along the lines of Bašić (2010) and the works cited therein, we don't have morphological justification for positing the *v* head since, as has been shown in the section 3. 2., nominals in -*ač* do not include a thematic vowel but solely a verbal root (and aspectual markers). On the other hand, on the basis of the event interpretation of some -*ač* nominals, we can argue for a *v* head, at least if we adopt the model of Alexiadou and Schäfer (2010), who assume that an event is introduced in *v* and bound by an aspectual operator in Asp. Roy and Soare (2014), on the other hand, following Borer's model, assume that the event argument is introduced in one of the Asp heads. If we take eventivity to be linked to an Asp head, we can interpret the presence of aspectual morphology in the structure of -*ač* nominals as a spell-out of this head. However, as has been shown, despite the presence of aspectual morphology, nominals in -*ač* accept neither imperfective nor perfective aspectual modifiers.[31] Correspondingly, the verbal meaning of imperfectivity versus perfectivity is not maintained in these nominals, which argues against the Asp head. Contrary to this, the Croatian complex event nominals, in addition to exhibiting the morphological aspect, license appropriate aspectual modifiers (examples 40 and 41). These nominals are sometimes derived from both an imperfective and a perfective verb and their interpretation includes the perfective vs. imperfective difference.[32] The nominals with the suffix -*ač* are not usually derived from both aspectual pairs of the verb. If we find these two forms attested (two nominals derived from the same verbs which differ only in aspect), it is often the case that one form is older and not in use any more, and the corresponding nominals do not differ in their interpretation. In (77), the noun in (a) is an archaic variant of the -*ač* noun in (b), with the same meaning 'armchair'.

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[30] The thematic vowel is a prototypical verbal feature (cf., e.g., Bošnjak Botica 2011).

[31] The situation is similar in English, although English does not have lexical aspect. Therefore, Alexiadou (2001) suggests that absence of aspectual modifiers with -*er* nominals is linked to the different denotation of the derived nominal.

[32] Deverbal nouns ending in -*nje* sometimes have systematic aspectual pairs, as do verbs in Slavic languages, and the different aspect results in a systematically different interpretation: *naoružanje* 'arms' ← *naoružati* (perf.) 'arm'; *naoruž**av**anje* 'arming' ← *naoružavati* (impf.) 'arm'.

(77) a. nasl**a**njač 'armchair' (archaic) ← nasl**a**njati (se) 'lean on' (refl., impf.)

   b. nasl**o**njač 'armchair' ← nasl**o**niti (se) 'lean on' (refl., perf.)

As has been illustrated earlier, the nominals derived from perfective verbs are less frequent than nominals derived from imperfective verbs and more prone to have specialized meanings. At this point, it is not clear how to link these properties to the internal structure of -*ač* nominals. However, it is clear that Asp heads in the structure of -*ač* nominals and -*nje* nominals differ in many respects. The aspect heads in the structure of the -*nje* nouns (Croatian CENs) are certainly the same heads as those in the verb structure. In the case of the -*ač* nouns, we must assume Asp heads which differ in their semantics (from verbal Asp) or are defective in some way. On the other hand, it could be stipulated that only aspectual morphology together with the thematic vowel supplies the structure with a proper verbal/aspectual character.

The Voice head introduces an external argument in Alexiadou & Schäfer's model. The head is well motivated for Croatian -*ač* nominals, which show regular behavior in regard to EAG. If we suppose that -*ač* nouns contain the Voice head and a kind of Asp head (defective in some sense) in their structure, we do not have an explanation for the nominal's obvious verbal origin. Such an analysis will also lead to the conclusion that category-neutral roots (as supposed in DM) are able to merge with Voice and Asp head without first merging with the *v* head, which would be an unexpected conclusion. The eventive argument is, definitely, part of the structure of the deverbal -*ač* nominals, whatever type of head introduces it. On the whole, the distinction between an episodic and dispositional interpretation of agentive nouns is confirmed by Croatian data. As demonstrated in section 4, Croatian -*ač* nouns can be eventive (modification with *namjeran* 'deliberate', frequency adjectives and BAs with non-intersective internal reading) and the eventivity is not correlated with animacy. Modification with *namjeran* 'deliberate' and frequency adjectives shows a clear cut between episodic and dispositional nouns. Modification with BAs shows that instruments are special in a way: sometimes the *big*-type adjectival modification with nonintersective internal interpretation is available for instruments, sometimes it is not. The reasons for such differences are not completely clear. It could be that some other factors are involved. As Larson (1998, 18) has already observed, "adverbial readings of adjectives may not be a unitary phenomenon and that certain cases will not be analyzable by relativizing nominals to events".

Roy and Soare (2014) correlate episodicity/genericity to (non-)speci-ficity. Consequently, an argument of an episodic nominal is (more) specific, whereas an argument of a dispositional nominal is (more) non-specific. The data from Croatian have also confirmed that complements of episodic nom-inals can be considered as inclining towards more specific interpretation, whereas complements of dispositional nouns tend to be less specific. In-terchangeability of genitive nominals with *za*-phrases when co-occurring with instrument -*ač* nouns argues for a different status of these phrases; presumably their argumental status is questionable.

Finally, although not all facets of Alexiadou & Schäfer's model can be applied to Croatian, the investigation of -*ač* nominals has proved the usefulness of the distinction of episodic and dispositional nominals for Croatian.

6. Conclusions

On the basis of the research above, we can draw a few conclusions. Firstly, Croatian nominals with the suffix -*ač* are semantically cognate to English -*er* nominals and similar nominals in other languages. Hence, Croatian gives additional support for assuming the universality of some semantic categories in word formation. Croatian deverbal -*ač* nouns support the EAG crosslinguistically, as well. Secondly, some of the Croatian -*ač* nom-inals are eventive and fit in a twofold distinction of -*er* nominals (episodic and dispositional) proposed by Alexiadou & Schäfer (2010). However, in-strumental nouns with the suffix -*ač* are distinguished in a way (accept the FA and BA modification only marginally, interchangeability of gen-itive phrases with *za*-phrases), which conforms to the assumption about instruments made by Roy & Soare (2014). Thirdly, Croatian -*ač* nominals select a verb root and an aspectual marker, but not a thematic vowel, which is problematic for assumption of the *v* head in their structure. The *v* head is well motivated by eventive properties of -*ač* nominals, but it is not supported by morphological evidence if the thematic vowel is consid-ered a spell-out of the *v* head in Slavic (Bašić 2010 and related works). On the contrary, CENs in Croatian have a thematic vowel in their structure. Aspectual heads in the structure of -*ač* nouns are supported by aspectual markers, but are not justified by aspectual modification (in which respect Croatian does not differ from other languages). Obviously, the semantic content of the Asp heads in -*ač* nominals differs from that of Asp in the structure of verbs and -*nje* nouns. The Asp heads in the structure of -*ač* nouns license event-related adjectives, but not aspectual modifiers (CENs

and verbs license both). A problem arises if we think that in accordance with DM, both syntax and morphology manipulate the same heads (and there is only one kind of Asp head). Then, if we do not assume a *v* head in the structure of *-ač* nouns and do assume that roots are unspecified for a category, it follows that some roots can be merged with Asp without being first merged with *v* (the structure being aspectual without being verbal). Certainly, the problem will be avoided if we assume that a root is specified for the V category. Fourth, the research has also shown that morphological markers of aspect are not inextricably linked to aspectual modifiers. This could support the view of word formation in which it is assumed that semantic structure is separated from morphological structure, a perspective which is not followed in this paper.

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